Arch Chemicals, Inc.

MATERIAL SAFETY DATA

FOR ANY EMERGENCY, CALL 24 HOURS/7 DAYS:	**1-800-654-6911**
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300
FOR ALL MSDS QUESTIONS & REQUESTS, CALL MSDS CONTROL:	1-800-511-MSDS

PRODUCT NAME: HTH® SPA PH DECREASER

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

REVISION DATE: 10-24-2003 SUPERCEDES: 09-10-2003
MSDS NO: 01917-9001 - 86206

MANUFACTURER: **Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204**

SYNONYMS: Sodium bisulfate solution
CHEMICAL FAMILY: Bisulfate salt solution
FORMULA: $NaHSO_4$ (solution)
USE DESCRIPTION: To lower the pH and alkalinity of spa water
OSHA HAZARD CLASSIFICATION: Corrosive, skin and eye hazard

SECTION 2 COMPONENT DATA

PRODUCT COMPOSITION
CAS or CHEMICAL NAME: Sodium bisulfate
CAS NUMBER: 7681-38-1
PERCENTAGE RANGE: 30-40%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Water
CAS NUMBER: 7732-18-5
PERCENTAGE RANGE: 60-70%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

SECTION 3 PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING MIST OR VAPOR
STORAGE CONDITIONS:
STORE IN A COOL, DRY, WELL VENTILATED PLACE. KEEP CONTAINERS CLOSED WHEN NOT IN USE. WILL ATTACK MOST METALS

PRODUCT STABILITY AND COMPATIBILITY
SHELF LIFE LIMITATIONS: No Data
INCOMPATIBLE MATERIALS FOR PACKAGING: Most metals
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Strong alkalis

SECTION 4 PHYSICAL DATA

APPEARANCE: Clear liquid
FREEZING POINT: No Data
BOILING POINT: 104 Deg.C (220 Deg.F)
DECOMPOSITION TEMPERATURE: Solid residue - 299 Deg.C (570 Deg.F)
SPECIFIC GRAVITY: 1.3
BULK DENSITY: 1.3 (g/cc)
pH @ 25 DEG.C: 1.4 (0.1M solution)
VAPOR PRESSURE @ 25 DEG.C: No Data
SOLUBILITY IN WATER: Completely miscible
VOLATILES, PERCENT BY VOLUME: No Data
EVAPORATION RATE: No Data
VAPOR DENSITY: Vapor is mostly water vapor
MOLECULAR WEIGHT: 120
ODOR: Slight acid odor
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

SECTION 5 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION:
Respirator protection not normally needed. If vapors, mists, or aerosols are generated, wear a NIOSH approved respirator.
VENTILATION:
Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.
SKIN AND EYE PROTECTIVE EQUIPMENT:
Wear gloves, boots, apron and a face shield with safety goggles. A full impermeable suit is recommended if exposure is possible to large portion of body.

Eye wash station and safety shower should be provided in the immediate work area.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE)
RESPIRATOR TYPE: NIOSH approved dust/mist filter respirator
PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron, protective suit): Neoprene

SECTION 6 FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:
EXPLOSIVE: No
FLAMMABLE: No
COMBUSTIBLE: No
PYROPHORIC: No
FLASH POINT: None
AUTOIGNITION TEMPERATURE: Will not support combustion
FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): LEL - Not Applicable UEL - Not Applicable

NFPA RATINGS:
Not Established
HMIS RATINGS:
Health: 3
Flammability: 0
Reactivity: 0

EXTINGUISHING MEDIA:
Not Applicable-Choose extinguishing media suitable for surrounding materials.
FIRE FIGHTING TECHNIQUES AND COMMENTS:

Use water to cool containers exposed to fire. Toxic fumes of sulfur oxides may be generated (See Section 7). See Section 11 for protective equipment for fire fighting.

SECTION 7 REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
TEMPERATURES ABOVE: Stable at normal room temperatures; solid residue will begin to decompose at 299 Deg.C (570 Deg.F)
MECHANICAL SHOCK OR IMPACT: No
ELECTRICAL (STATIC) DISCHARGE: No
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS: Strong alkaline materials, most metals, organics
HAZARDOUS DECOMPOSITION PRODUCTS: None unless heated above 570 Deg.F; hazardous fumes of sulfur dioxide and sulfur trioxide may be generated at higher temperatures

SUMMARY OF REACTIVITY:

EXPLOSIVE:	No
OXIDIZER:	No
PYROPHORIC:	No
ORGANIC PEROXIDE:	No
WATER REACTIVE:	No

SECTION 8 FIRST AID

EYES:
Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.
SKIN:
Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, the clothing should be removed immediately and should be laundered before re-use.
INGESTION:
Immediately drink large quantities of water. DO NOT induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.
INHALATION:
If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough product to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

SECTION 9 TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
Inhalation, skin and eye contact, ingestion

WARNING STATEMENTS AND WARNING PROPERTIES
DO NOT TAKE INTERNALLY. CAUSES SKIN, EYE, RESPIRATORY TRACT AND DIGESTIVE TRACT BURNS.

HUMAN THRESHOLD RESPONSE DATA

ODOR THRESHOLD: No Data
IRRITATION THRESHOLD: No Data
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: No IDLH concentration has been established for this product.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION
ACUTE:
Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may also cause burns to the respiratory tract which can result in symptoms which may include: coughing; shortness of breath, wheezing, choking, chest pain, and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage.
CHRONIC:
Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.

EYE
Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

SKIN
ACUTE:
Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.
CHRONIC:
Repeated dermal exposure may cause tissue destruction due to the corrosive nature of the product.

INGESTION
ACUTE:
Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration. Ingestion may cause severe damage to the gastrointestinal tract with the potential to cause perforation.
CHRONIC:
There are no known or reported effects from chronic exposure. Chronic ingestion of significant amounts of this product is unlikely because of its acute corrosive action.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Asthma and other respiratory diseases; skin disorders
INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY
None known or reported.

ANIMAL TOXICOLOGY
ACUTE TOXICITY:
INHALATION LC50: No data
DERMAL LD50: Believed to be > 2 g/kg. (rabbit)
ORAL LD50: Believed to be > 5 g/kg. (rat) based on similar structured products.
IRRITATION: Causes burns to eyes and skin

ACUTE TARGET ORGAN TOXICITY:
This product is expected to be severely irritating or corrosive to all tissues contacted.

CHRONIC TOXICITY:

Effects would be similar to those experienced from acute exposure and may include effects secondary to tissue destruction.

REPRODUCTIVE TOXICITY:
There are no known or reported effects on reproductive function or fetal development.

CARCINOGENICITY:
This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

MUTAGENICITY:
This product is not known or reported to be mutagenic.

AQUATIC TOXICITY:
Sodium Bisulfate:
For immobilization of Daphnia magna, the threshold concentration of sodium bisulfate in Lake Erie water was found to be less than 145 mg/l. It has been shown that the threshold toxicity value is dependent on dissolved oxygen. For Daphnia exposed 100 hours at 23 degrees C, the threshold concentrations were as follows:

Dissolved Oxygen, mg/l	Theshold Level of Toxicity, mg/l
6.5	153
8.9	145
1.55	106

SECTION 10 TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101:
LAND (U.S. DOT): BISULFATE, AQUEOUS SOLUTION, 8, UN 2837, PG III

WATER (IMO): SAME AS LAND

AIR (IATA/ICAO): SAME AS LAND

HAZARD LABEL/PLACARD: CORROSIVE
REPORTABLE QUANTITY: NOT APPLICABLE (Per 49 CFR 172.101, Appendix)
EMERGENCY GUIDE NO: 154

SECTION 11 SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.
REPORTABLE QUANTITY: Not Applicable (Per 40 CFR 302.4)

SPILL MITIGATION PROCEDURES:
Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area. Stop source of spill as soon as possible and notify appropriate personnel.

AIR RELEASE: Vapors may be suppressed by the use of water fog.

WATER RELEASE: This material is heavier than and soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.

LAND SPILL: Create a dike or trench to contain materials. Spill materials may be absorbed using any absorbant materials. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using

detergent and flush with large amounts of water.

SPILL RESIDUES:
Dispose of per guidelines under Section 12, WASTE DISPOSAL.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:
In case of fire, use NIOSH approved self-contained breathing apparatus (SCBA).

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots, gloves (see below for compatible materials) and impervious clothing, i.e., chemically impermeable suit.
Compatible material for response to this product is: Neoprene

A hazardous physical characteristic of this product is: Corrosive

SECTION 12 WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

SECTION 13 ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
This substance is listed on the Toxic Substances Control Act inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
Immediate (Acute)
PHYSICAL:
None

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

SECTION 14 ADDITIONAL INFORMATION

No Additional Information

SECTION 15 MAJOR REFERENCES

References are available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION INTHIS MSDS SHOULD BE PROVIDEDTO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.

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